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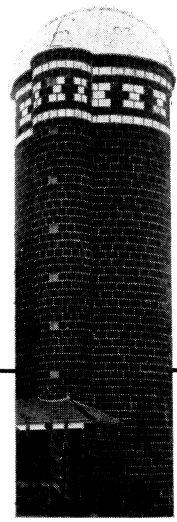

How Much CORN SILAGE in the DAIRY RATION

by A. R. Porter

TESTS AT Iowa State College indicate that corn silage can replace more hay in the dairy cow ration than is commonly believed. This doesn't mean that college dairy husbandrymen are recommending that dairymen leave all hay from the cattle ration, but corn silage can replace hay to the extent that it's practical and economical.

From the information now available, it appears that feeding corn silage as the only roughage in the winter doesn't impair growth, production or reproduction. No cumulative results of a harmful nature have been found. However, near the end of the winter, cows on corn silage alone have shown a craving for dry roughage.

Some dairymen have fed grass or legume silage to their cows as the only roughage and have reported satisfactory results. The feeding trials here with corn silage suggest no disadvantages from such a practice.

When both corn silage and hay are available, it's usual to supply about half of the dry matter in the roughage from each. But, when hay is unusually scarce or high-priced, it might be desirable to increase the proportion of silage to hay.

In our tests, we paired 22 Holstein heifer calves at birth. One calf of each pair was fed corn silage as the sole roughage. We fed the other calf of each pair hay for approximately 6 months and both hay and silage afterwards. Both groups were pastured in the summer after 1 year of age.

The oldest of these animals are now 5 years of age. We kept records of growth, milk and butterfat production, feed consumption and breeding efficiency to see if differences resulted from feeding the two types of rations.

No Appreciable Differences

The "silage" heifers averaged slightly larger than their mates at birth but didn't grow as rapidly when young calves. Calves receiving hay ate more roughage at an early age than those receiving only silage. However, after reaching 1 year of age, no appreciable difference in size was apparent.

Neither could we find any great differences in breeding efficiency nor in milk and butterfat production. Average milk and butterfat production for the first and second lactations are shown in tables 1 and 2.

Experiments have shown that 3 pounds of corn silage replaces 1 pound of alfalfa hay in total nutrients. In this test, cows on the silage ration are eating from 70 to 84 pounds daily. The other cows are eating from 45 to 50 pounds of silage and 10 to 14 pounds of alfalfa hay daily. We didn't attempt to study the relative costs of the two feeding systems since the costs would vary a great deal from farm to farm.

The question of whether to replace hay with corn silage is mainly a problem for the individual farmer. If he can produce or buy 3 tons of silage more cheaply than 1 ton of hay, he would want to consider replacing hay in the dairy ration. In making this decision, the farmer must consider the complementary effects of hay in the cropping system.

TABLE 1
Milk and Butterfat Production in First Lactation*
(Group Averages)

	Standard Cows	"Silage" Cows
Age at first calving (months)	27	26
Milking period (days)	320	333
Milk production (pounds)	11,511	12,876
Butterfat production (pounds)	399	422
305-day, mature equivalent, butterfat production (pounds)	515	537
Range in 305-day, mature equivalent, butterfat production (pounds)	433 to 591	420 to 628

TABLE 2
Milk and Butterfat Production in Second Lactation*
(Group Averages)

	Standard Cows	"Silage" Cows
Age at second calving (months)	40	39
Milking period (days)	315	334
Milk production (pounds)	12,567	14,368
Butterfat production (pounds)	421	471
305-day, mature equivalent, butterfat production (pounds)	483	536
Range in 305-day, mature equivalent, butterfat production (pounds)	393 to 603	446 to 670

* All records made on a twice-a-day milking basis.

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